What is claimed is :

1. A β-catenin oligonucleotide microchip for detecting β-catenin mutations comprising a plurality of oligonucleotides fixed on the surface of a solid matrix, wherein the oligonucleotides are designed to detect a variety of mutations at mutational hot spots of β-catenin gene.

2. The β-catenin oligonucleotide microchip of claim 1, wherein the mutational hot spots of β-catenin gene are codons 29, 31, 32, 33, 34, 35, 37, 38, 41, 45 and 48.

3. The β-catenin oligonucleotide microchip of claim 1, wherein the oligonucleotides are designed to detect 9 types of missense mutations, 1 type of in-frame deletion and a wild type at codons 29, 31, 32, 33, 34, 35, 37, 38, 41, 45 and 48.

4. The β-catenin oligonucleotide microchip of claim 3, wherein the oligonucleotides for detecting missense mutations at codons 29, 31, 32, 33, 34, 35, 37, 38, 41, 45 and 48 are those of SEQ ID Nos. 2 to 10, SEQ ID Nos. 13 to 21, SEQ ID Nos. 24 to 32, SEQ ID Nos. 35 to 43, SEQ ID Nos. 46 to 54, SEQ ID Nos. 57 to 65, SEQ ID Nos. 68 to 76, SEQ ID Nos. 79 to 87, SEQ ID Nos. 90 to 98, SEQ ID Nos. 101 to 109, and SEQ ID Nos. 112 to 120, respectively.

5. The β-catenin oligonucleotide microchip of claim 3, wherein the oligonucleotides for detecting in-frame deletions at codons 29, 31, 32, 33, 34, 35, 37, 38, 41, 45 and 48 are those of SEQ ID No. 11, SEQ ID No. 22, SEQ ID No. 33, SEQ ID No. 44, SEQ ID No. 55, SEQ ID No. 66, SEQ ID No. 77, SEQ ID No. 88, SEQ ID No. 99, SEQ ID No. 110, and SEQ ID No. 121, respectively.

6. The β-catenin oligonucleotide microchip of claim 3, wherein the

oligonucleotides for detecting wild types at codons 29, 31, 32, 33, 34, 35, 37, 38, 41, 45 and 48 are those of SEQ ID No. 1, SEQ ID No. 12, SEQ ID No. 23, SEQ ID No. 34, SEQ ID No. 45, SEQ ID No. 56, SEQ ID No. 67, SEQ ID No. 78, SEQ ID No. 89, SEQ ID No. 100, and SEQ ID No. 111, respectively.

7. A manufacturing process of the β-catenin oligonucleotide microchip of any of claims 1 to 6, comprising

1) mixing each of the oligonucleotides in a micro spotting solution and distributing to a well plate;

2) spotting the oligonucleotides on the surface of a solid matrix using a microarrayer;

3) fixing the oligonucleotides on the solid matrix surface and washing;

4) denaturing the fixed oligonucleotides by soaking the solid matrix in 95℃ water, and then, treating the solid matrix with a sodium borohydride solution; and

5) washing and drying the solid matrix.

8. The manufacturing process of claim 7, wherein each of the oligonucleotides used in step (1) has a 12 carbon spacer with 5' amino modification.

9. The manufacturing process of claim 7, wherein the solid matrix of step (2) is a glass, modified silicone, plastic cassette or polymer plate.

10. The manufacturing process of claim 9, wherein the solid matrix is coated with an aldehyde or amine.

11. The manufacturing process of claim 7, each oligonucleotide spot of step (2) is of circular shape with a diameter ranging from 100 to 500 ㎛.

12. The manufacturing process of claim 11, the oligonucleotide spots of step (2) are arranged in multiple column and rows of intervals of 200 to 800 ㎛.

13. A method for detecting the β-catenin mutation using the β-catenin oligonucleotide microchip of claim 1, comprising

1) preparing a fluorescent dye-labeled DNA sample from the blood of a subject patient;

2) reacting the labeled DNA sample with oligonucleotide spots on the β-catenin oligo chip;

3) washing the reacted oligo chip to remove unbound sample DNA;

4) detecting the mode of hybridization of specific oligonucleotide spots using a fluorescence reader; and

5) examining the presence of gene mutation.

14. The method of claim 13, wherein the fluorescent dye of step (1) is selected from the group consisting of Cy5, Cy3, Texas Red, Fluorescein and Lissamine.

15. The method of claim 13, wherein the reaction of step (2) is performed in a 45~60℃ incubator saturated with water vapor for 3~9 hours.